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MAP OF THE DISTRICTS

OCCUPIED BY BROAD AND NARROW GAUGE RAILWAYS RESPECTIVELY,

SHOWING ALSO THE BREAKS OF GAUGE,

Where Passengers and Goods must be shifted from one Carriage to another.

[Reprinted, by permission, from the *Railway Chronicle.*]

The district in which the gauge of the Railways is not yet determined is left white. The green lines in this district are those on which the BROAD, or EXCEPTIONAL GAUGE, already exists. Other lines in the district left white are sanctioned, and their promoters (the Great Western Railway Company) propose to make them on the broad gauge, but they await the decision of Parliament whether they shall be on the broad or narrow gauge.

All THE REST OF THE COUNTRY, coloured red, is that into which the broad gauge has not penetrated, and where only the UNIFORM or NARROW GAUGE is to be found.

The BREAKS OF GAUGE are represented by round dots, and show the number which will result from the

The proportions of the Broad to Narrow Gauge are as follows:—

		Value.		Length.
Existing Railways	Broad.....	£9,704,368	..	240
	Narrow....	57,186,117	..	1593
Railways authorized but not opened	Broad.....	£7,432,000	..	577
	Narrow....	21,736,640	..	1216

The Mineral Railways—all Narrow Gauge—are not included in this total; reckoning them at about 300 miles, they make the total of existing Narrow Gauge Lines above 1,900 miles.

NARROW GAUGE

SPEEDIER

THAN

BROAD GAUGE RAILWAYS,

AS WELL AS CHEAPER.

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way on the Broad Gauge, was the attaining of high speeds, and the credit of the proposers and defenders of that construction has therefore been deeply engaged in maintaining them." Nevertheless, we find that several Narrow Gauge railways were working fast trains much quicker than, and at the same time as frequently as, the fast trains of the Broad Gauge; for instance,

The London and Brighton (Narrow Gauge) Railway was running four trains at 33¼ miles per hour, while the Great Western (Broad Gauge) was running only the same number of trains (four) at 26¼ miles per hour, or *seven miles per hour slower than the Brighton Company.*

The South-Western (a Narrow Gauge line) was giving as many fast trains a day as the Great Western (the Broad Gauge railway), and those at a quicker rate.

The Great North of England and Midland Counties were both running two fast trains a day, each of these trains being considerably faster than any of the Great Western (the Broad Gauge company's) trains.

From these facts we cannot avoid drawing the conclusion, that the rate of speed which has prevailed on railways during the last year cannot be regarded as the spontaneous and natural effect of the Broad Gauge, for it certainly seems that until

the progress of events obliged the Broad Gauge party to make exertions and sacrifices to obtain great speed in order to justify their early professions, and to bring forward something to set off against the many defects urged as inherent in their system, their speed was very considerably lower than on several of the Narrow Gauge railways.

This by no means coincides with the impressions which the Broad Gauge party have always endeavoured to create on the subject of speed, nor with the opinion of a large portion of the public, who have always assumed that the Great Western was the quickest railway because the Great Western always said it was; nevertheless, it was not by any means the quickest railway, and this is a fact of some importance at the present moment.

It is not then to be wondered at that the Narrow Gauge companies should scoff a little, and point to this fact, when they are told that it is to the genius of Mr. Brunel and the liberality of the Great Western Company that we are indebted for the present rate of speed.

But let us see what the different railways are doing in the way of speed at the present moment. In order to ascertain this, I have made out the following table from "Bradshaw's Time-Tables," for February last. I divide the trains into Fast

trains, which are all above 25 miles per hour, and Express trains: this is the result:—

Table showing the Speed of Travelling on various Railways.

	Fast.		Express.	
	Speed in miles per hour.	Number of Trains daily at this speed.	Speed in miles per hour.	Number of Trains daily at this speed.
South-Western, Narrow Gauge, 4 ft. 8½ in.	27	6	39	2
Grand Junction, ditto	27	5	31½	6
London and Brighton, ditto	25½	6	33	3
Manchester and Birmingham, ditto	25¾	3	33½	2
Great North of England, ditto	26½	4	30	2
Edinburgh and Glasgow, ditto	27½	11	—	—
London and Birmingham, ditto	26½	11	36½ 32¾	2 1
Dublin and Drogheda, intermediate Gauge, 5 ft. 3 in.	21¾	2	28	4
Great Western, Broad Gauge, 7 ft.	27¼	10	44	2

It has been already shown that the time-tables of a company cannot, generally speaking, be regarded as a test of the capacity for speed of any given line or system of railway; but, at the same time, it cannot be disputed, that if ever a railway was put to its trial on the plea of speed,—if ever the managers of a railway, or the promoters of a system, had occasion to show what their forte was, and what they could do if they chose, the Great Western Railway and the Broad Gauge system are in that predicament. It cannot either be denied that, whether as regards the excellence of

their line in respect of gradients and curves, the order in which the rails are kept, the energy of the management, or the character of their traffic, which is all under their own control, no other line joining them, or other company working on their line, there never was a company in a better position to make a good show of speed. These things cannot be disputed, and should not be lost sight of. But let us get to the facts.

I find, in the first place, that as regards the average rate of travelling at the admittedly safe and proper speeds, the *narrow gauge has still decidedly the advantage.*

I observe that, while the Great Western (the Broad Gauge railway) has ten trains a day at 27¼ miles per hour, the Edinburgh and Glasgow (a Narrow Gauge railway) has 11 trains a day at 27½ miles per hour; and it is remarkable that this is the only Narrow Gauge railway whose gradients are at all comparable to those of the Great Western Railway, although there is an incline upon *it* of 1 in 42, which causes some delay in every journey. This company has not thought it expedient, it seems, to adopt the new fashion of an express train; but, with its ordinary fast trains, it more than equals the Great Western. So also the South-Western and Grand Junction lines, with third-rate gradients and curves, equal within a quarter of a mile per hour the Great Western.

The other lines, all of inferior gradients compared with the Great Western, are within 1 and 2 miles an hour of the Great Western fast trains.

I now come to the Express trains, and here I find the Great Western are decidedly faster than any other line. But I also find from Bradshaw's time-table, that during the last summer, on the Northern and Eastern—a Narrow Gauge railway—there was an express train travelling at 44 miles per hour, which was discontinued only when the large piece of new line was opened for traffic, over which it was dangerous to run at excessive speed.

Now it is worth remark that the Northern and Eastern is the next best line in point of gradients to the Edinburgh and Glasgow, *although both are inferior to the Great Western Railway;* and on one of these Narrow Gauge railways I find an express train has been running as fast as that on the Great Western Railway, while on the other, which has not adopted the new fashion of express trains, the ordinary trains above 25 miles an hour go faster than, and as frequently as, those on the Great Western.

The speed on the Dublin and Drogheda has been given, because the line is on the Intermediate Gauge, in which some people fancy such magic lies: it will be seen that both the Narrow and the Broad Gauge exceed it in speed.

I have now something to say as to the real effect of express trains running at exceptional speeds on the average speed and safety of the other trains, which convey the great majority of the travellers on every railway; but without stopping to dwell upon this, an investigation of facts does compel us to admit that even giving the Great Western the advantage of its express train at 44 miles per hour, the average speed of the trains above 25 miles an hour on the Grand Junction, is at this moment within half a mile an hour of those on the Great Western, and when all the facilities for, and inducements to, obtaining high speed on the Great Western Railway which I have recapitulated are taken into account, there certainly seems no way of escaping the conclusion that can be drawn from the working hitherto of the Great Western Railway, that the Broad Gauge, *per se*, has no advantage in speed over the Narrow Gauge; ***but if any inference can be drawn from the actual working, past and present, of the two systems, the Narrow Gauge has proved itself, and is proving itself, the more speedy.***

So much for what has been done and is doing: what can or ought to be done hereafter, and maintained, is a matter, as I have said, of purely speculative engineering opinion; and the authorities, although I do not place much faith in them

on such a point, are certainly against the Broad Gauge.

A word now as to Express trains, their origin, and use:—They were the first-fruits of the Battle of the Gauges of last year, put on by the Great Western at Easter, just as the railway committees met. They were, I believe I may say, started rather at the instigation of the managers of the Parliamentary season than of the engineers, and they may be regarded something in the same light as feats of tight-rope dancing—very wonderful, and not a little dangerous,—at least, I cannot think that such men as Stephenson and Locke—not accustomed to be frightened by trifles—should shake their heads at them without cause; and the results, I think, justify their apprehensions.

The Gauge Commissioners state in their Report, that it appears from the returns of accidents made to the Board of Trade, that more accidents from trains getting off the rails, have occurred in seven months since the express trains came into vogue, than occurred from that cause during the preceding four and a half years, and *that of these accidents the Broad Gauge has had more than its share.* It must also be remarked that the danger from these trains is not over when the train has passed; but the injury to the road, from the fearful momentum of the engine, remains while the heavy

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